ABSTRACT

A clearance seal assembly is disclosed. The assembly comprises a stationary member defining a first side, a second side and an opening connecting the first and second side; a moving member moveably disposed through the opening; and a sealing member circumferentially disposed between the stationary member and the moving member. The sealing member has a fluid-tight relationship with the stationary member. The sealing member and the moving member define a continuous and uniform gap having a size that allows the fluid to fill the gap but prevents the fluid from flowing through the gap from the first side to the second side of the opening under an operating pressure differential between the first and the second side. In a preferred embodiment, both the sealing member and the moving member are made of a ceramic material. The sealing assembly may also include a static seal disposed between the stationary member and the sealing to allow a variable clearance therebetween while maintaining the fluid-tight relationship between the sealing member and the stationary member. A pump utilizing the sealing assembly of the present invention is also disclosed.